



Utah Division of Water Resources

Plan | Conserve | Develop | Protect Utah's Water Resources

20

WATER FOR UTAH

water.utah.gov

22

Plan

Conserve

Develop

Protect

Utah's Water Resources

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Director's Message

Utah Division of Water Resources



The last couple of years have been challenging. The Covid-19 pandemic continued into 2021 and wild weather events (including record-high temperatures, flooding and drought) hit Utah hard. Utah experienced some of the worst water supply conditions on record. In July, 99.94% of the state was in extreme and exceptional drought conditions - the two worst categories. Great Salt Lake and Lake Powell both dropped below their previous record lows. Thankfully the monsoons returned in July and August to help improve soil moisture, reduce wildfire risks and reduce demand as people shut off sprinklers. However, it did little to refill our depleted reservoirs. I am incredibly grateful for the drought response and

conservation efforts from all Utahns. This collective response reduced the impacts of the drought on our water supply.

A safe, reliable water supply is critical to Utah's prosperity, quality of life and environment. Our changing climate has brought us drier conditions and more extreme weather events. I recognize the importance of good data and collaboration as we move into the future. It will take all of us, working together to address Utah's water challenges. I look forward to working with policy makers, the water community and stakeholders now and into the future.

A handwritten signature in black ink, appearing to read 'C.C. Hasenyager'.

Candice Hasenyager, **Director**



"A safe, reliable water supply is critical to Utah's prosperity, quality of life and environment ."



Candice Hasenyager, Director
Utah Division of Water Resources

Board of Water Resources



Over the past 75 years, the Board of Water Resources (Board) has provided financial assistance to irrigation companies, municipalities and water districts to construct approximately 1,520 projects. The Board is comprised of eight appointed individuals who represent the eight river districts in Utah. The Board has specific powers and duties which include approving projects, administering funding, and contracting with agencies at the local, state and federal levels.

In fiscal year 2021, the Board funded 20 projects with a total contribution of just over \$64 million. These projects included:

- 6 small agricultural efficiency and improvement projects
- 3 large agricultural efficiency and improvement projects
- 7 dam safety projects
- 2 secondary metering projects
- 2 municipal water delivery projects

\$988M
in
Water Development
Loans

75 Years
1520
Projects

The Board



Kyle Stephens

Chair

Weber, Davis & Summit
Counties



Juliette Tennert

Vice Chair

Salt Lake & Tooele
Counties



Charles Holmgren

Box Elder, Cache & Rich
Counties



Randy Crozier

Daggett, Duchesne &
Uintah Counties



Blaine Ipson

Millard, Sanpete, Sevier,
Piute & Wayne Counties



Norm Johnson

Carbon, Emery, Grand &
San Juan Counties



Jim Lemmon

Beaver, Garfield, Iron,
Washington & Kane
Counties



Wayne Andersen

Juab, Utah & Wasatch
Counties

Board of Water Resources

Legislative Authority



Protect
Utah's rights
to interstate
waters



Direct
comprehensive
water planning



Manage Utah's
construction
programs and
provide funding
for Dam Safety
Compliance



Oversee compliance
with water
conservation plan
requirements

Statutory Authority

Utah Division of Water Resources



Colorado River Compact (Utah Code 73-12a-1/3)

Provides for equitable division of use of the waters of the Colorado River System

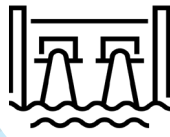


Modification of Weather (Utah Code 73-15-1/8)

Research, evaluate and implement cloud seeding projects

Water Conservation Plan Act
(Utah Code 73-10-32)
State Water Plan
(Utah Code 73-10-15)
Colorado River Compact
(Utah Code 73-12A-1/3)
Bear River Development Act
(Utah Code 73-26)
Lake Powell Pipeline Development Act
(Utah Code 73-28-101/105; 201/203; 301/302; 401/405)
Water Development Coordinating Council
(Utah Code 73-10c-1/9)
Privatization Projects
(Utah Code 73-10d-1/9)
Amended Bear River Compact (Utah Code 73-16-1/5)

Columbia Interstate Compact
(Utah Code 73-19-1/20)
Emergency Water Resources
(Utah Code 73-20-1/11)
Agricultural Water Optimization Task Force
(Utah Code 73-10g-202)
Secondary Water Metering
(Utah Code 13-10-34)
Water Conveyance Facilities Safety Act
(Utah Code 73-10-33)
Water Infrastructure Restricted Account
(Utah Code 73-10g-104)
West Desert Pumping Project
(Utah Code 73-23-1/6)



Dam Safety



Funding

The Legislature has appropriated ongoing grant funding since 1992 for dam safety projects.

From 1997 to 2007, ~\$4.3 million was appropriated per year. In 2008, it was reduced to ~\$700,000.

From 2009 to present, funding has been \$3.8 million per year.

\$3.8M



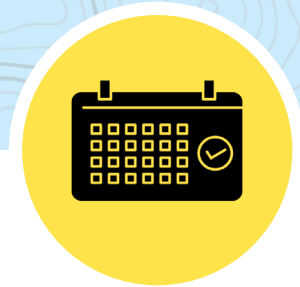
High-hazard

Homes are being built closer to dams, creating "hazard creep," which creates additional urgency to ensure dams meet safety standards.

Classification of high hazard dams is the risk of loss of

- Life
- Property

170+



Timetable

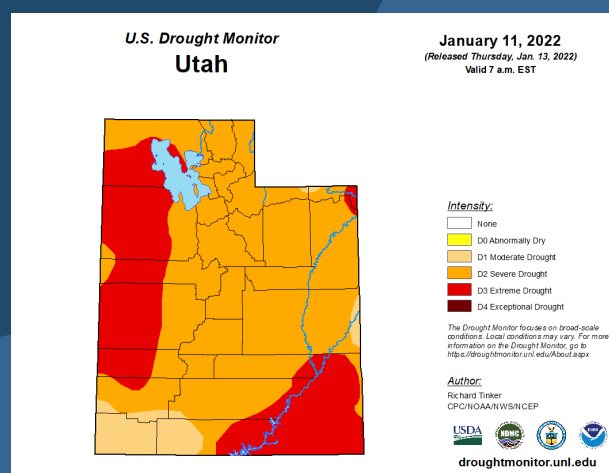
In order for the remaining high hazard dams to be brought up to minimum safety standards, an estimated \$330 million is needed.

At the current funding rate, it's estimated to take 88 years to bring dams up to safety standards.

88 years

Drought

With Utah being one of the driest states in the nation, it's imperative to have quality drought plans that will help local and state agencies prepare for and responsibly address drought conditions. The Division began updating the 2013 State Drought Response Plan. We are incorporating lessons we learned from events in 2021 into the updated plan. The update plan will be published this spring.



"This past year set all the wrong records." - Candice Hasenyager, Director, Utah Division of Water Resources.





Transparency Accessibility Engagement

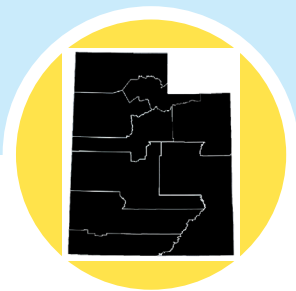


Utah's Open Water Data

Publicly available data provided by the Utah Division of Water Resources

The Division strives to improve the discoverability and transparency of data maintained by the state. Through the development of interactive apps, maps and data visualizations, staff at the Division facilitates public engagement with water data, making water issues more relevant and accessible.

Given Utah's diverse geography, establishing region-specific water conservation goals makes sense.



9 REGIONS

In 2019, the Division finalized the state's first-ever regional water conservation goals. Goals were established for nine regions around the state for municipal and industrial water conservation. These goals exclude agriculture, mining, and power generation water use.



IT TAKES EVERYONE TO BE SUCCESSFUL

The 2030 water conservation goals will require significant effort, increased attention, participation and funding from the legislature, state agencies, municipal water retailers, local elected officials, wholesale public water suppliers and citizens of Utah.



ENHANCED WATER CONSERVATION EFFORTS

As recommended by the 2015 Legislative Audit, 2017 Follow-up Audit, Third-Party Review, and 2017 Recommended State Water Strategy, regional water conservation goals were developed to enhance water conservation efforts around the state.

Water Conservation & Education

The water conservation and education programs are focused on activities and programs to help Utahns reduce their per capita municipal and industrial water use. Available tools and programs include:



Homeowner Turf Removal Efforts



2021 was the first year of “Flip Blitz”, a campaign that raises awareness about how small landscape changes can make a big difference. The Utah Division of Water Resources converted four grassy park strips to lush but waterwise landscapes. The Division is planning to expand the campaign and eventually create an open-source manual in order for water conservation organizers to hold a “Flip Blitz” in any part of Utah.



**Increasing
education for
water-wise
landscapes.**

**5,000 - 8,000
gallons in water
savings for every
park strip flipped**

Agricultural Optimization

Agriculture is an essential industry. Everything that grows on the farm and ends up on our tables requires water. Fortunately, agricultural producers around the state are actively seeking advancements in irrigation and water management technology to optimize water use. In this context, optimize means to make the best or most effective use of the water that is available and in some cases even reducing consumptive use. Optimizing agricultural water use will not only help ensure agricultural productivity, but will improve overall water management within a watershed and basin.

Find more information at water.utah.gov/agwateroptimization



AGRICULTURE MAKES UP 75% OF UTAH'S TOTAL WATER USE

Investment in Agricultural Optimization will create supply flexibility, benefits for farmers and improve water quantity and quality.



CREATES BEST PRACTICES

When farmers learn how to grow a crop more efficiently the knowledge tends to spread to other farmers by word of mouth.



OPTIMIZE WATER USE

Agricultural Optimization creates opportunities for the water being saved by farmers.



Transparent Water Billing



Inform

The goal of Transparent Water Billing is to implement water billing practices that inform customers on their water use in an easy-to understand manner. The program wants to increase transparency and ease of public access to water use data.



Reduce

Water providers that have implemented innovations in how information and water use data are shared publicly and presented in customer billing statements have shown reductions in water use of 5-18%.



Save

When a customer is better informed and implements water saving practices they will save more money on their water bill. This will also mean more water saved.

Find more information at conservewater.utah.gov/transparent-water-billing

Secondary Water Metering



1/3
OF UTAH
USES
SECONDARY
WATER

20-30%
IN
WATER
SAVINGS

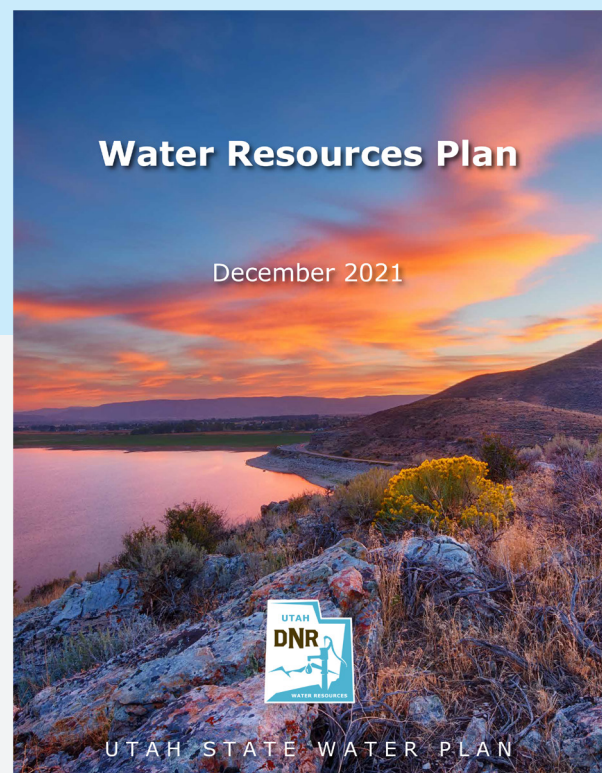
Recent legislation requiring pressurized secondary water to be metered is an effective water conservation measure. Metering secondary water allows providers the opportunity to inform the customer of their actual water usage, resulting in more efficient and responsible water use behavior. For example, metered customers reduced their water use by 22-40% in Weber Basin when informed of their actual use vs. what their landscaping actually required.

Water Resources Plan 2021

The Water Resources Plan is comprised of a series of documents, including basin plans, water budget summaries, municipal and industrial water use reports, special topic reports, as well as the state-wide water plan.

In 2021, the Division published a new statewide plan, the Water Resources Plan. The purpose of the plan is to provide a comprehensive evaluation of Utah's water resources, commit to Division actions, and make recommendations. The plan recognizes the importance of coordinated watershed planning and recounts the challenges facing the state. The plan includes an analysis of the following:

- Municipal and Industrial water use and supply
- Agricultural water use
- Water use demand projections
- Effects of climate change



Watershed Planning

The Division is in the process of establishing the Utah Watersheds Council and regional watershed councils. In 2021, efforts were focused on reaching out to communities across the state to provide information about regional watershed councils and receive feedback. The first meeting to organize the Utah Watersheds Council was held in January. We anticipate several regional councils will be organized in 2022.

Watershed councils provide an opportunity for local stakeholders to share information and resources. We believe a coordinated approach will optimize available resources. Coordinating with local stakeholders is essential to holistic watershed planning and management.



UTAH WATERSHEDS COUNCIL

This state council will facilitate communication and coordination between multiple state and federal agencies in the administration and implementation of water-related activities.



LOCAL WATERSHED COUNCILS

The local watershed councils are created to encourage and facilitate discussion and collaboration by and among the stakeholders relative to the water-related interests of a specific geographic area and its people and institutions.



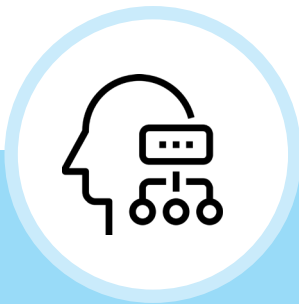
COLLABORATION

The local watershed councils will designate one representative to serve on the Utah Watersheds Council. It is the intent that these local councils be diverse and inclusive of all water interests.

Integrated Land Use and Water Planning

The Division of Water Resources in conjunction with the Division of Forestry, Fire and State Lands and the Great Salt Lake Commission are working with a consultant to develop a Utah program for integrating water considerations into planning efforts. This year we are working with a consultant to develop workshop materials and begin a pilot project in Utah. The pilot project will assist a community and the adjacent communities to integrate water use considerations into their planning efforts. Division staff will gain on-the-job training using materials developed by the consultant and customized for Utah in future workshops facilitated by the Division.

Find more information at water.utah.gov/integrated-water-land-planning/



INFORMED PLANNING

Planning land development with water considerations allows Utah to plan our developments and associated use around available water supplies.



COST EFFECTIVE

The cost of using waterwise landscaping options from the beginning is more cost effective than retrofitting existing development.

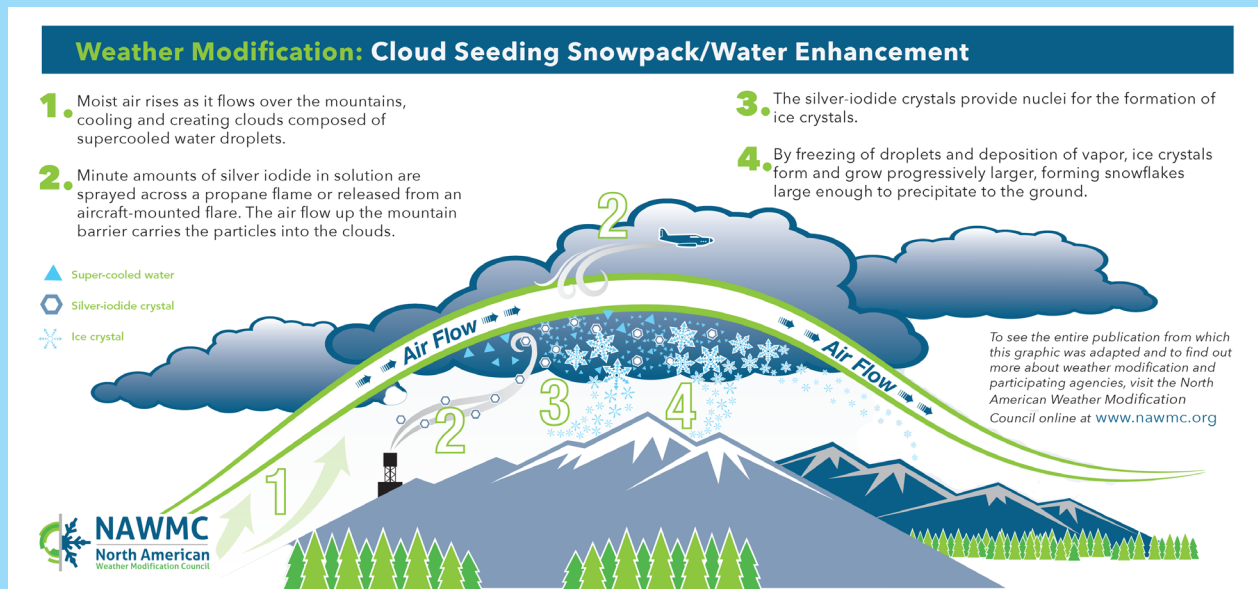


WATER-EFFICIENT LANDSCAPES

Drought tolerant plants are more accustomed to the weather Utah receives on a normal basis.



Cloud Seeding



Snowpack is Utah's largest reservoir!

CLOUD SEEDING INCREASES
PRECIPITATION ON AVERAGE

▲ 5% – 15%

Cloud seeding has long been recognized by water professionals as a feasible means to augment the natural water supply. Conditions are especially favorable in Utah where topography, climate and water storage reservoirs make winter snowpack enhancement cost-effective.

The Division provides \$350,000 in matching funds

Utah enacted weather modification legislation in 1973, and an operational cloud seeding program was funded in 1976. The field program runs November to April and is funded jointly by the state and local water interests. Statistical analysis shows an average increase in precipitation of 5% to 15% in seeded areas at a cost of about \$2.27 per acre-foot for the additional water.

Great Salt Lake

"We are absolutely linked as a state to the success and the health of Great Salt Lake"

~ Brad Wilson, Speaker of the Utah House of Representatives, Great Salt Lake Summit 2022



AVIAN LIFE

The Great Salt Lake is the largest salt-water lake in the Western Hemisphere. It is designated the "**Western Hemispheric Shorebird Reserve**" because of the abundant avian habitat.



HUMAN IMPACTS

Recent studies suggest that human water use has lowered the lake by approximately **11 feet** since the valley was settled in 1847, exposing submerged lakebed.



AIR QUALITY

Strong winds can erode the exposed lakebed and lift toxic dust into the local air affecting the Wasatch Front's air quality and nearby snowpack.



GSL BASIN STUDY

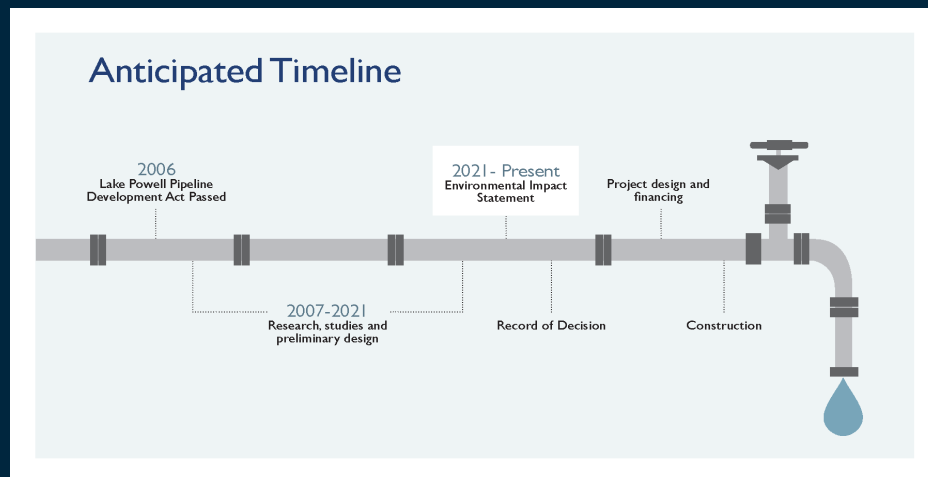
The GSL Basin Study builds off recent and ongoing studies by basin stakeholders to complete a state-of-the-art, comprehensive water supply and demand study for the basin.

Water Development Projects

Lake Powell Pipeline

The Lake Powell Pipeline (LPP) is a proposed 140-mile water delivery pipeline that begins at Lake Powell near Glen Canyon Dam and ends at Sand Hollow Reservoir near St. George. The pipeline would deliver 83,249 acre feet of water annually to 10 rapidly growing communities in Washington county. The LPP would help meet future water demands, diversify the regional water supply, and enhance the water supply reliability, which currently relies solely on the Virgin River basin. The U.S. Bureau of Reclamation (USBR) was assigned to lead the project in October 2019.

Water will be provided to
10 communities



LPP
diversifies the
regional
water supply

13

CONCEPTUAL
PROJECT
DESIGNS

UPDATED
COST
ESTIMATES
\$1.5-2.8B

Bear River Development

In 1991, the Utah Legislature passed the Bear River Development Act, which authorizes and directs the Division of Water Resources to "... develop the surface waters of the Bear River and its tributaries through the planning and construction of reservoirs and associated facilities..."

Planning for the development or storage of the Bear River has been ongoing for several decades. The Division has been working with Bowen Collins & Associates to update and refine the findings of the 2014 Pipeline Concept Report for a conceptual Bear River Development (BRD) project.

The 2019 Bear River Feasibility Study was released and shows that it is feasible to accomplish this project via storage development. The study includes 13 potential reservoir combinations, pipeline alignments, as well as an updated cost estimate.

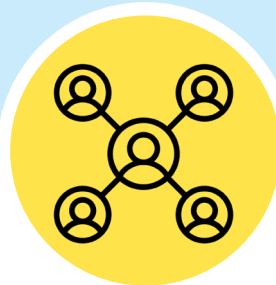
Colorado River



Colorado River Authority of Utah

The Utah legislature and governor have authorized and directed the creation of this new state agency to set policy regarding Colorado River Management.

The mission of this body is "to protect, conserve, use, and develop Utah's waters of the Colorado River system."



Seven States Negotiations

Negotiations between the seven Colorado River Basin States, regarding the operations of Lakes Powell and Mead, have been initiated and will continue over the next several years.

The early stages of discussions are steadily moving forward.



Law of the River

The Law of the River requires the **Upper Basin** states to send **75 million acre-feet** of water on a 10-year rolling average to the lower basin states (1922 Colorado River Compact). During the last 10 years, which includes some of the driest years in recorded history, the **Upper Basin** has delivered **88 million acre-feet** of water to the Lower Basin.

The background of the entire page is a stylized topographic map. It features a complex pattern of brown contour lines of varying thicknesses, representing elevation. Interspersed among these lines are several light blue areas that represent water bodies, such as lakes and rivers. The overall effect is a textured, map-like background.

Utah Division of Water Resources

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